

REMARKS

In paragraphs 2 and 4 of the Action, all the claims pending in the application were rejected under 35 U.S.C. 102(b) or 35 U.S.C. 103(a) by Kato et al.

In view of the rejections, claims 1, 5 and 12 have been amended, and claims 2, 4, 6, 8 and 10 have been canceled. Also, new claim 15 has been filed.

In a method for manufacturing a thermoplastic resin vessel of the invention, at first, a thermoplastic resin sheet is fixed outside a forming portion of a cup-shaped vessel, and then, the thermoplastic resin sheet is pre-formed by a plug. Thus, the thermoplastic resin sheet is slightly extended or projected.

Then, a pre-formed portion of the thermoplastic resin sheet is clamped inside a portion where the thermoplastic resin sheet is fixed, and the pre-formed portion is further drawn by the plug into a lower mold. Thus, the cup-shaped vessel is formed.

In the invention, the thermoplastic resin sheet fixed outside the forming portion is pre-formed. Thus, the portion forming a flange portion is oriented and crystallized, so that warping after forming the product is prevented. Also, the resin at the outer peripheral portion of the flange portion can be sufficiently used, and the thickness of the bottom part can be increased (page 13, line 18 to page 14, line 23 of the specification).

In the invention, the pre-formed portion is clamped. Thus, the part of the resin is pushed out of the portion, so that the flow orientation of the resin becomes great. Also, the warp of the flange portion is improved (page 15, lines 10-16 of the specification).

In Kato et al. cited in the Action, a plastic sheet 1 in the molten state is supported by a fixing member 2 (column 4, lines 1-2). An upper mold 24 includes a bottom wall portion 26 having an engaging projecting portion 28 which engages the mold opening

portion 14 via the plastic sheet and form a flange portion of the container.

In forming a plastic container, a plug 20 is lowered to the plastic sheet 1 supported by the fixing member 2 and the mold 10 rises. As the plug 20 and the mold 10 move relative to each other in the closing direction, the molten plastic sheet 1 is drawn effectively into the mold cavity 11. Since the annular member 15 has slipperiness, the molten plastic sheet slides over the annular member 15 of the upper surface of the mold and is at the same time effectively drawn into the cavity 11 (column 4, line 67 to column 5, line 5).

In the invention, after the thermoplastic resin sheet is fixed outside a forming portion of a cup-shaped vessel, the thermoplastic resin sheet is pre-formed by a plug. In Kato et al., the plastic sheet supported by the fixing member 2 is simply drawn by the plug 20.

In the invention, after the resin sheet is pre-formed, the pre-formed portion of the thermoplastic resin sheet is clamped inside a portion where the thermoplastic resin sheet is fixed, and the pre-formed portion is further drawn by the plug into a lower mold. In Kato et al., there is no pre-forming, and the preformed portion is not clamped.

In Kato et al., a part of drawing of the resin sheet by the plug 20 may be recognized as a pre-forming of the resin sheet. However, it is clear that no clamping step is made in Kato et al. while the resin sheet is being drawn. The clamping step is not disclosed or suggested in Kato et al.

Claim 12 includes additional steps in addition to the steps in claim 1. Therefore, claim 12 is patentable over Kato et al., as well.

As explained above, claims pending in the application are patentable over Kato et al.

Reconsideration and allowance are earnestly solicited.

Respectfully Submitted,

By Manabu Kanesaka  
Manabu Kanesaka  
Reg. No. 31,467  
Agent for Applicants

1700 Diagonal Road, Suite 310  
Alexandria, VA 22314  
(703) 519-9785